SB761
.U7N6
#74-23

INSECT DISEASE REPORT

USDA FOREST SERVICE/NORTHERN REGION

5200

Report No. 74-23 October 1974

EVALUATION OF A WEEVIL INFESTATION IN THINNED LODGEPOLE PINE STANDS LEWIS AND CLARK NATIONAL FOREST, MONTANA

by

D. R. Hamel and M. D. McGregor, Entomologists
Forest Environmental Protection

INTRODUCTION

An infestation of a defoliating weevil, *Magdalis gentilis* LeConte, was reported in July by Hank Manning, Judith Ranger District forester, Lewis and Clark National Forest. The infestation occurs in precommercially thinned stands of lodgepole pine, *Pinus contorta* var. *latifolia* Engelm. in the Moose Creek drainage. Although damages caused by *M. gentilis* are relatively uncommon in Region 1 forests, the current problem has existed since 1965 (Fellin 1973). An evaluation of the infestation was made August 14, 1974.

WEEVIL DAMAGE

Damage caused by *Magdalis gentilis* is in the form of defoliation by adult weevils feeding on current year's growth. Superficial feeding by adult weevils results in punctured needles. Heavy feeding by undisturbed beetles causes needle perforation with holes passing through needles and/or needle fascicles. Heavy feeding leads to necrosis of distal portions of attacked needles.

Damaged pine shoots are easily recognized since attacked needles turn brown and frequently hang at odd angles throughout the foliage. Undamaged needles and portions of needles remain green. From a distance attacked trees appear reddish-brown.

Damages caused by other life stages of *M. gentilis* are unknown. Adults collected at Moose Creek August 14 deposited oblong, yellow eggs on August 16 on lodgepole pine needles in the laboratory; however, it has not been determined if this is a preferred ovipositional site or one of convenience. Observations are continuing on other life history developmental stages to determine their potential damage capability.

ROCKY MOUNTAIN STATION
LIBRARY

Other members of the genus *Magdalis* are twig borers during their larval stage (Fellin 1973). They often develop within slash; however, there are no indications that this species uses slash for feeding or oviposition. Slash apparently does play a significant role in the biology of *M. gentilis* since they seem to be attracted to recently thinned areas by volatile odors released by newly felled trees.

CURRENT STATUS OF INFESTATIONS

A direct relationship exists between the timing of stand thinning and severity of *Magdalis* weevil damage. Fellin (1973) indicated that crop trees in areas thinned before late July usually suffer heaviest damage. Stands thinned during late July and early August are moderately damaged and areas thinned after mid-August suffer least.

The present survey of the Moose Creek drainage supports this analysis. Three areas totalling approximately 700 acres were observed on August 14, 1974 (Figure 1). Time of thinning of various areas and their observed degrees of *M. gentilis* damage are as follows:

Area 1.-- This area along Culvert Creek included three thinning stands (711.3-03, 711.3-05 and 711.3-02) all thinned July 16, 1974. *M. gentilis* damage was moderate. In spite of cool temperatures active, adult weevils were collected from needles.

Area 2. -- This area, adjacent to Bottle Creek, also included three stands (711.3-12, 711.3-10 and 711.3-11). Thinning proceeded in this area between July 22 and August 3, 1974. Weevil damage, although evident, was relatively low. No adults were collected at this location.

Area 3. -- Adjacent to the road along Moose Creek this area suffered the heaviest damage with partially defoliated trees easily visible from roadside. Four thinning stands (711.2-08, 711.3-09, 711.3-13 and 711.4-01) comprised the area which was the first area thinned this season between July 2 and July 8, 1974. Several dozen active weevils were collected from this plot. They were returned to the Regional Forest Service laboratory for observation.

Information obtained from this survey generally supports the conclusions of Fellin (1973) that early stand thinnings are more susceptible to *M. gentilis* damage than those conducted later in the season.

DISCUSSION AND RECOMMENDATIONS

Although not considered a serious forest pest, *Magdalis gentilis* does damage young, precommercially thinned lodgepole pine stands, and as such requires attention by Forest Service personnel. Fortunately damages caused by this beetle are restricted to current year's foliage and infestations in any one thinning area do not persist for more than one growing

Figure 1.--*Magdalis gentilis* LaConte infestations. Lewis and Clark N.F., Montana 1974

Infestation Centers

season. This allows trees to recover following single season weevil attacks.

Since the immature stages of this pest are not yet known there is a need to study its biology and ecology to determine its potential for becoming a more serious pest of the lodgepole pine ecosystem.

Recommended control measures are preventative in scope. Damage to young trees is most severe when thinnings are made prior to late July; therefore, an acceptable method of reducing weevil damage is to delay thinnings until mid-August whenever possible.

LITERATURE CITED

Fellin, D. G. 1973. Weevils attracted to thinned lodgepole pine stands in Montana. USDA Forest Service Research Paper INT-136.